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## **A Changing Role for Agriculture in Global Political Economy?**

### **Brazil's Emergence as an Agro-Power \***

Chapter 8 in *The Global Political Economy of Raúl Prebisch*

Routledge RIPE Series in Global Political Economy.

Kristen Hopewell  
Senior Lecturer in International Political Economy  
University of Edinburgh  
kristen.hopewell@ed.ac.uk

*Abstract:* This chapter analyses the case of Brazil to show how its recent development experience both confirms and defies the expectations of Prebisch's theory. Brazil has become one of the largest and most competitive agricultural exporters in the world. This has been translated into political influence on the global stage and enabled it to secure prominent roles in global economic governance. Contrary to Prebisch's expectations, agriculture has provided an important source of economic growth and development. Yet in accordance with Prebisch's theory, technological innovation has played a critical role in Brazil's development – although not in manufacturing but in agriculture.

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## **Introduction**

For Raúl Prebisch – and resulting offshoots such as dependency theory and world system’s theory – a central claim was that development requires moving from the export of agricultural and other commodities to manufactured goods, since agriculture is seen as locking developing countries into a marginal position in the global political economy. Prebisch (1962) and others inspired by his structural analysis (Frank 1966; Gereffi and Evans 1981; Wallerstein 1974) argued that the prospects for poor countries to develop were blocked by their dependence on the export of primary products at declining and volatile prices to the core industrialized countries of the global economy, in exchange for imports of higher-value manufactured goods. Peripheral countries were thus seen as locked into a system of unequal economic exchange, with those unfavourable terms of trade worsening throughout much of the twentieth century (Ho, this volume). With the export of commodities identified as a barrier to economic prosperity, it was argued that underdeveloped countries needed to industrialize in order to be released from “the straitjacket of agrarian, pastoral, and mining production” (Cardoso 2009: 297).

Prebisch and his intellectual successors maintained that development policy should therefore be guided towards the promotion of industry. Prebisch was a leading proponent of import-substitution industrialization (ISI) to foster the development of manufacturing industries. Rejecting the premise of laissez-faire, Prebisch advocated an interventionist state, actively engaged in steering economic growth and development. Technology is central to Prebisch’s theory, which saw advanced technologies and systems of innovation as concentrated in the core. As Matías Vernengo (2004: 3) writes, at the heart of the dependency relation between centre and periphery lay “the inability of the periphery to develop an autonomous and dynamic process of

technological innovation. ... The Centre countries controlled technology and the systems for generating technology.” Prebisch and other structuralists thus emphasized the role of the developmental state in the promotion of technological advance.

In this chapter, I analyse the case of Brazil to show how its recent development experience both confirms and defies the expectations of Prebisch’s theory. In recent decades, Brazil became one of the largest and most competitive agricultural exporters in the world. Brazil emerged as an agricultural export powerhouse and channelled this newfound source of economic might into new and important forms of political power in the international system. For Brazil, the rapid expansion of its agribusiness exports contributed to fostering macroeconomic stability, fuelling high rates of economic growth and boosting government revenues, which, in turn, made possible redistributive policies that produced significant gains in reducing poverty and inequality.

Brazil’s new role as a major agricultural trader also played an important role in its enhanced status and influence on the global stage – as an emerging power and one of the BRICS (Brazil, Russia, India, China and South Africa) – and enabled it to secure a more prominent role in global economic governance. Contrary to the expectations of Prebisch, agriculture has provided an important source of economic growth and development in Brazil.

Yet the Brazilian case also conforms to Prebisch’s belief that an active, interventionist state concentrated on fostering technological innovation is critical to development. As I will show, Brazil’s emergence as an agricultural powerhouse was propelled by state-driven innovation and related policies that transformed a large part of the country that was previously considered an agricultural wasteland into one of the most productive agricultural regions in the world, made it

possible to grow temperate crops in its tropical climate, and dramatically increased the efficiency and competitiveness of Brazilian agriculture. Importantly, however, this is *not* the traditional form of agriculture that has long been prevalent in developing countries; instead, the dominant form of agriculture that has emerged in Brazil is highly capital intensive and based on technological advance and innovation. In accordance with Prebisch's theory, technological innovation has played a critical role in Brazil's recent development model – although not in manufacturing but in agriculture.

It is worth noting that Brazil's experience has thus departed significantly from the policy prescriptions of the dominant neoliberal trade and development paradigm. Neoliberalism maintains that the solution to the development problem is for countries to liberalize and open their economies, remove state intervention, privatize functions previously performed by the state, and thereby “free” markets to facilitate the efficient movement of goods and capital (McMichael 2012). However, in contrast to the neoliberal orthodoxy, Brazil did not emerge as an agro-export powerhouse by relying simply on “the magic of the market.” Instead, active state intervention played a critical role in its agricultural revolution, which in turn provided the foundation for its newfound economic and political clout on the international stage.

### **The Changing GPE of Agriculture**

Prebisch, like many others, saw agriculture as a backwards and declining sector in the global political economy. But two things may be changing this: the industrialization of agriculture and structural changes in global demand.

Agriculture has become highly industrialized, capital-intensive and – particularly with recent growing global demand and food scarcity – lucrative (see Hopewell 2016a). This is connected with other changes in the global economy. It is no longer simply the case that the Global South exports primary products and the Global North manufactured goods. Since the 1980s, the Global South has exported more manufactured goods than primary products, while the Global North exports far more primary products than the Global South (Harris 1987). Between 1950 and 1980, the developing world's share of global agricultural exports dropped from 53 to 31 percent (Grigg 1993: 251). Concurrently, the US and Europe significantly expanded their share of global agricultural production and consolidated their positions as the world's dominant exporters in this sector, through increases in productivity fuelled by technological advance and the strategic use of trade policies (such as tariff and subsidies). While capital-intensive production and intellectual property remain concentrated in the core, the periphery is now associated with low-skilled, labour-intensive production, whether in traditional agriculture or manufacturing. The presence of manufacturing industry alone is thus no longer a marker of development and, conversely, nor is agriculture or raw materials production necessarily an indicator of weakness. Indeed, many of the emerging powers today – such as China, India and Brazil – are major commodity producers (Wilson 2015).

The dominant form of agriculture that has now emerged in Brazil (as well as other major exporters like the US, Europe, Canada and Australia) is *industrialized agriculture*, capital-intensive and technologically-sophisticated. It is “high-tech” agriculture, employing advanced machinery and production methods, engineered seeds and chemicals, and large economies of scale. As Prebisch and the dependency theorists recognized, the key marker of development is

“knowledge-based assets” (Amsden 2001) – research and development-fuelled knowledge, technology, and intellectual property. And it is precisely such knowledge-based assets that have been the basis of Brazil’s agriculture boom, which has been technology-driven and, importantly, based on domestic innovation. While in an earlier period of dependent development, Brazil’s industrial development (like that of other semi-peripheral countries) was heavily dependent on foreign technology (Evans 1979), its recent emergence as an agro-power has been driven by indigenous technological development. In fact, Brazil is now even exporting its advanced agricultural technology and know-how to other countries. In this sense, Brazil’s experience conforms to Prebisch’s expectation that the underlying driver of growth and development is systematic investment in knowledge and technology.

The expansion of Brazil’s agriculture exports has also been buoyed by the boom in global commodity prices since 2003, which as Kaplinsky and Farooki describe in this volume, is unprecedented in the last two centuries. There is evidence to suggest that this may not be simply a transitory phenomenon but may represent a “new normal” in the global political economy. As Kaplinsky and Farooki write, unlike “the post-WW2 era when high-income developed economies with low-commodity-intensive growth-paths were the drivers of demand growth, existing and future demand growth in the global economy is likely to be a function of the expansion of commodities-consuming middle and low income economies.” Rapid growth in per capita incomes and increasing meat consumption are fuelling surging demand – especially from China, but also from other large emerging economies (such as India) and developing country markets – specifically for the products in which Brazil is now a dominant producer, such as beef, chicken, pork and soy (used as animal feed). Although commodity prices in general have fallen

from the heights they reached at the peak of the commodity price boom, demand for animal protein has continued to grow unabated, fuelling prices for meat and soy that remain elevated above historical levels – and this shows no signs of abating (OECD/FAO 2016). Brazil's agricultural exports are directly tapping into and benefiting from rising incomes and growing demand across much of the developing world, a result of the massive shift in global economic activity from the Global North to the Global South currently underway in the global political economy.

### **The Evolving Role of Agriculture in Brazil**

As in many developing countries, for much of its early history, the Brazilian economy centred on the export of tropical agricultural products, such as coffee and rubber, to rich country markets in Europe and the US. Motivated by the desire to move the country away from its dependence on agricultural exports and foster the development of manufacturing industries, the state embarked on a program of import-substitution industrialization (ISI) beginning in the 1930s and accelerating in the 1950s-70s (Evans 1979). Economic policy during this period emphasized the subordination of agricultural to industrial development and, with the success of Brazil's ISI policies, the importance of agriculture in the national economy declined as that of manufacturing increased. As recently as the 1970s, Brazil was a net-agricultural importer and, until the 1960s, it systematically received food donations from abroad (Martha, Contini and Alves 2013). Brazil's agricultural sector was then based primarily on large plantations producing tropical products for export, small family farms supplying the domestic market, and peasants engaged in subsistence production.



Although Brazil's ISI policies achieved considerable success in fostering economic development and transforming Brazil into a major industrial economy, the international debt crisis in the early-1980s plunged Brazil into an economic crisis, faced with major balance of payments problems, soaring inflation, and an inability to meet its international debt obligations.

Policymakers determined that the old model of an inward-looking economy with substantial state intervention to promote industrial development was no longer sustainable and embarked on a major program of economic reform and liberalization. During the 1980s and 1990s, Brazil introduced market-oriented reforms, including aggressive inflation fighting to stabilize the macroeconomic environment, the elimination of foreign trade restrictions and barriers to foreign investment, and reducing state intervention in markets. As I will show, liberalization had an explosive effect on the growth of Brazil's agribusiness sector and its exports. But this should not simply be read as a story of the triumph of neoliberal economic reforms, unleashing the market and prompting a flourishing of private enterprise. On the contrary, state-led innovation played a critical role in the transformation and take-off of Brazilian agribusiness.

### **The Role of State-Led Innovation in Transforming Brazilian Agriculture**

In the 1970s, the Brazilian state began an effort to modernize agriculture in support of its ISI program (see Hopewell 2016a). Its goal was to facilitate industrial development by boosting agricultural productivity and output to (1) alleviate a food supply shortage by providing cheap food for the domestic market and (2) expand agricultural exports in order to boost foreign exchange earnings needed to finance the import of technology and capital goods for the continued process of industrialization. Brazil's agricultural modernization program centred on substantial investment in research and development, backed by the provision of agricultural

extension services and subsidized credit to facilitate the diffusion of new practices and technologies.

A new federal research institute, the Brazilian Enterprise for Agricultural Research (EMBRAPA), was created in 1973 and charged with constructing a large research infrastructure of laboratory and other facilities. Within a decade, EMBRAPA employed nearly 1000 researchers, in addition to coordinating nationwide agricultural research (Wilkinson and Sorj 1992). EMBRAPA's research concentrated on increasing productivity and adapting agricultural systems to the distinctive ecosystems of Brazil's agricultural frontier: the Amazon, the Pantanal, the semi-arid interior, and especially the *cerrado*. Substantial investments were made in the development of novel, science-based technologies for tropical environments, including plant genetics and new seed varieties, soil correction and management, and improved agricultural practices adapted to the use of industrial inputs and machinery (Martha, Contini and Alves 2013). The stream of scientific and technological innovations ultimately produced by EMBRAPA played a central role in propelling the development of Brazil's contemporary agro-export sector.

Simply put, the development of Brazilian agribusiness would not have been possible without state intervention. Despite its large landmass, much of Brazil's land is not naturally suited to commercial agriculture. Most of Brazil's land lies in a tropical climate, but tropical climates generally provide acidic, weathered soils of low fertility that cannot sustain the bulk staple crops grown in temperate climates (Pereira and Neves 2011). It had long been understood that only temperate regions could engage in large-scale, intensive agricultural production. Consequently,

even by the late-1960s, more than half of Brazil's territory remained untouched by agriculture (Martha, Contini and Alves 2013). In particular, the vast *cerrado* region – a savannah that stretches for more than 1,000 miles across central Brazil and accounts for 24 percent of the country's total area – was considered unfit for agriculture due to its acidic and infertile soil. As Martha et al (2013: 207) state, “the stock of agricultural technologies and empirical knowledge at that time indicated that the agricultural frontier – the ‘Brazilian Cerrado’ – could, at best, accommodate only subsistence farming.” In the words of Norman Borlaug, the Nobel Peace Prize-winning agronomist, “nobody thought these soils were ever going to be productive” (Rohter 2007).

It was technological innovation driven by state-sponsored R&D and related policies that enabled Brazil to overcome these seemingly insurmountable constraints. New technologies developed by EMBRAPA transformed Brazilian agriculture by turning the *cerrado* into arable and pasturable land, enabling the expansion of large-scale, intensive agricultural production. In just decades, what was once considered a wasteland was transformed into one of the most important productive regions of the country. State-directed research carried out by EMBRAPA led to the successful development of new seed varieties and accompanying agricultural practices tailored to tropical conditions, thus making possible the emergence of a highly sophisticated and competitive agriculture sector in Brazil. This state-led technological innovation enabled Brazil to move away from the tropical products typically exported by developing countries (coffee, tea, sugar, bananas, etc.) to producing and exporting commodities (soybeans, cotton, beef, chicken, pork, etc.) that directly compete with those of the world's dominant agricultural producers – the US, EU, and other countries of the Global North.

Left on its own, with soils that are naturally highly acidic, low in fertility, and prone to degradation, the *cerrado* was effectively toxic to agriculture (Huerta and Martin 2002; Rada 2013). Yet new technologies created by EMBRAPA made it possible to improve soil chemistry, reduce acidity and enable key crops – such as soybeans – to thrive in the *cerrado*'s less fertile conditions (Correa and Schmidt 2014; Rada and Valdes 2012). EMBRAPA also developed and promoted important technical solutions to address the *cerrado*'s poor quality, fragile soil conditions and vulnerability to erosion, including soil recuperation, “no-till” agriculture, and integrated systems of crop production and cattle grazing (Correa and Schmidt 2014; Huerta and Martin 2002).

At the same time, EMBRAPA's innovations in plant breeding made possible the adaption of temperate crops to Brazil's tropical climate, most notably in the case of soybeans, which has become the *cerrado*'s main crop and one of Brazil's leading exports (Goldsmith and Hirsch 2006). Historically, it was only possible to grow soybeans in temperate climates (such as the US and Argentina). Through cross-breeding and genetic improvements, however, EMBRAPA created new soy cultivars that could grow in tropical climates, with greater tolerance for soil acidity, thereby enabling the expansion of soybean production in the *cerrado*, as well as the arid northeast (Wilkinson and Sorj 1992). EMBRAPA also developed new fast-growing soybean varieties; their shorter growing period enabled Brazil to operate two harvests per year (compared to one in traditional producers like the US), dramatically increasing the yields and productivity of Brazil's soy industry (Huerta and Martin 2002). Propelled by these innovations, Brazil has emerged as a significant challenger to the US, which was historically the world's dominant soy

producer and accounted for more than 75 percent of global exports (Gibson and Benson 2005).

Brazil is now the world's second largest soy producer, with its exports claiming 45 percent of the global market, and it is expected to soon overtake the US (OECD/FAO 2016).

EMBRAPA made similarly important technological advances in other crops. Brazil's cotton sector, for example, was hampered by low productivity, plant disease, and fierce international competition, until EMBPRAPA developed new varieties of cotton adapted to tropical conditions that dramatically improved yields – which tripled between 1983 and 2010 – and quality (Correa and Schmidt 2014). Brazil has consequently emerged as a rapidly-rising cotton producer and the world's fourth largest exporter.

In addition, EMBRAPA developed novel plant varieties that dramatically increased productivity for grazing (Rada and Valdes 2012). This made it possible for parts of the *cerrado* to be turned into highly-productive pasture, fuelling a massive expansion of Brazil's beef industry and a dramatic increase in its productivity. As a result, Brazil's beef production increased nearly 4 fold and it has become the world's largest beef exporter, supplying 30 percent of the global market (Contini and Martha 2010).

The transformation of the *cerrado* has been described as “one of the greatest achievements of agricultural science in the 20th century” (World Food Prize cited in Rohter 2007). The *cerrado* now accounts for 70 percent of Brazil's farm output and is one of the top grain and beef-producing regions in the world. State-sponsored research and development has thus played a fundamental role in expanding Brazil's agricultural frontier and boosting levels of productivity.

Between 1970 and 2010, Brazilian agricultural production more than tripled, and it is projected to increase a further 38 percent by 2019 (OECD/FAO 2010). As Contini and Martha (2010: 3) put it, “the sector moved fast forward from a traditional to a science-based agriculture.” State-led innovation was a pivotal contributor both to this increase in productivity and to the territorial expansion of agriculture, which, combined, simultaneously lowered the overall costs and increased the yields of Brazil’s agriculture sector.

These technological advances have been supported by important related policy measures. Extension services facilitated the rapid diffusion of EMBRAPA’s research discoveries and adoption of the novel production systems it developed by Brazilian farmers. The adoption of new technology packages and the expansion of agricultural production into previously idle regions was further stimulated by a national system of subsidized credit. State-sponsored credit peaked in the 1970s, during Brazil’s ISI period, with high rates of rural credit provided by the state at heavily subsidized interest rates; yet, although rural credit was reduced substantially with structural adjustment in the 1980s and early 1990s, it has risen steadily since then (Contini and Martha 2010). Access to low-interest loans was critical in helping producers gain access to and apply the new productive systems that were being developed by EMBRAPA. Subsidized credit also enabled large producers from the southern part of Brazil, which had traditionally constituted the country’s centre of commercial agriculture, to expand their operations into the *cerrado*.

Brazil’s agricultural revolution has thus been fuelled by large and sustained public investments in science and technology and related policies. It was only through extensive state support – for R&D, as well as extension services and subsidized financing – that incorporating the *cerrado*

into Brazilian agricultural production, and using that land to grow temperate crops, was possible. Through state-led innovation, Brazil dramatically increased its effective agricultural land supply, along with the productivity and global competitiveness of its agribusiness sector.

### **Brazil's Emergence as an Agro-Export Powerhouse**

State intervention originating in the ISI period thus created the enabling conditions for the take-off of Brazil's agribusiness sector with economic reform and market opening in the 1990s. The combination of technological innovation and economic liberalization led to explosive growth in Brazilian agricultural production and exports. Liberalization generated substantial investment, restructuring and consolidation in the sector, spurring rapid and sustained export-led growth. Between 1995 and 2013, Brazil's agricultural exports increased over 6 fold from \$14bn to \$86bn.<sup>1</sup> This growth has been driven by the expansion of corporate farming, including the emergence of “mega farms” – large, professionally managed corporate farm groups benefitting from massive economies of scale, many with planted areas in excess of 1 million hectares. The agro-industrial sector that has developed in Brazil is among the world's most sophisticated, based on large-scale, mechanized, capital-intensive, vertically-integrated production.

Brazil has emerged as an agro-industrial powerhouse: it is one of the most competitive agricultural producers in the world and a leading exporter of a large and growing number of products (including beef, poultry, ethanol, soy, corn, cotton, and pork). Brazil is now the third largest agricultural exporter, after the US and EU, and the country with the largest agricultural trade surplus.<sup>2</sup> It is the first country to catch up with the traditional “big five” grain exporters

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<sup>1</sup> UN Comtrade Data.

<sup>2</sup> FAO Data 2011.

(the US, Canada, Australia, Argentina, and the EU), and its exports are expected to continue to expand rapidly over the next decade and beyond. Brazil has undoubtedly arrived among the world's "agro-powers" (Margulis 2014).

Brazil's highly-industrialized, export-oriented agriculture sector now plays a major role in its economy. Agribusiness has become an important engine of economic growth, contributing 28 percent of GDP and over 40 percent of exports (Damico and Nassar 2007; Valdes 2006).

Responsible for 97 percent of the country's balance of trade surplus (OECD 2009), agriculture exports provide a critical means of generating foreign exchange and avoiding the balance-of-payments problems that have historically plagued the country. Between 1997 and 2009, agribusiness produced a trade surplus of US\$405 billion (Contini and Martha 2010). As one Brazilian trade official stated, "Just look at the figures – my macro[economic] stability depends on agribusiness."<sup>3</sup>

Brazil's agricultural exports have contributed to fuelling strong rates of economic growth and providing revenues for social programs that have made meaningful gains in reducing poverty and inequality. The state has combined the pursuit of neoliberal macroeconomic policies and export-led growth with redistributive policies, including raising the minimum wage and expanding social welfare through programs such as the *Bolsa Familia*, an income transfer to poor households, and Zero Hunger (*Fome Zero*), a program to combat food insecurity and extreme poverty. These policies have succeeded in reducing poverty, especially extreme poverty, as well as inequality (Soares, Ribas and Osorio 2007). The proportion of the population living in

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<sup>3</sup> Interview, May 2009.



poverty has fallen from 30 percent in 1990 to 11 percent in 2009, and inequality has fallen from a GINI coefficient of 60 in 2001 to 55 in 2009.<sup>4</sup> However, despite these impressive gains, 22 million people continue to live on less than \$2 per day, with poverty especially prevalent in rural areas, and Brazil remains one of the most unequal countries in the world.

Brazil's agricultural revolution has fuelled the expansion and internationalization of Brazilian agribusiness. There are now approximately 20 agribusiness companies in Brazil with annual sales of more than US\$1bn and others are poised to soon reach this level (EIU 2010). Brazilian firms have diversified their activities and moved up the value chain into higher value-added activities, such as trading, processing, transport, and energy production (biofuels). Many of Brazil's largest companies have globalized their activities and joined the ranks of the world's leading agribusiness multinationals. Brazil's JBS, for instance, has become the world's largest meatpacker, with annual revenues of over US\$40bn; it acquired many of the largest beef, pork and chicken processing companies in the US and Europe and now operates 150 plants around the world, with 190,000 employees and exports to 110 countries.<sup>5</sup> BRF-Brasil Foods has emerged as one of the largest processed food producers in the world, operating in 110 countries, with \$14bn in annual revenues and 130,000 employees.<sup>6</sup> The major Brazilian firms have transformed themselves into global actors, targeting foreign markets and engaged in extensive production and trading activities around the world.

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<sup>4</sup> World Bank data.

<sup>5</sup> Information available at: [www.jbs.com.br](http://www.jbs.com.br).

<sup>6</sup> Information available at: [www.brf-br.com](http://www.brf-br.com).

Recently, the halcyon days of Brazil's economic boom have come to an end as the country has fallen into deep political turmoil and economic recession. Brazil's remarkably high growth rates, which peaked at nearly 8 percent in 2010, were buoyed by high commodity prices not only in agriculture but also for its natural resource exports such as iron ore and crude petroleum. With iron ore and petroleum its first and third largest exports respectively, Brazil has been badly hit by slowing growth in the Chinese economy and weakening global demand, along with the glut in global oil markets. Yet demand and prices for Brazil's agricultural exports have remained strong; consequently, as Antonio Ioris (2015) describes, amidst the wider economic downturn in Brazil, agribusiness has remained "an island of prosperity and economic dynamism in a national context of losses and lack of investment." Agro-exports have been particularly critical for bolstering Brazil's trade balance and macroeconomic stability.

### **Emergence as a Major Power at the WTO**

Brazil's emergence as an agribusiness powerhouse has led to a fundamental reorientation of its trade policy. Historically, Brazil's trade policy was inward-looking – centred on protecting domestic industries from foreign competition – and it played only a minor role in multilateral trade negotiations (Lima and Hirst 2006). However, as the agribusiness sector developed, it pressed the state to take a more aggressive position in international trade negotiations, and Brazilian trade policy became increasingly focused on agricultural exports and expanding access to foreign markets as a key source of economic growth and development (see Hopewell 2014). Brazil emerged as a key actor in the Doha Round of trade negotiations, which began in 2001, and one of the strongest champions of agricultural trade liberalization at the World Trade Organization (WTO) (Hopewell 2016b).

Brazil's stance in international trade negotiations has been shaped by a significant change in the destination of its exports. Developed countries were once the main market for Brazilian agricultural products, but since 2004 most of its agricultural exports have been destined for developing countries and other non-traditional export destinations (Damico and Nassar 2007). China is now the largest market for Brazilian agro-exports, and other emerging markets in the Asia-Pacific, Middle-East and North Africa, and Eastern Europe and the former USSR represent the most dynamic markets for Brazil's exports, with demand in these regions continuing to grow rapidly. In the words of one Brazilian negotiator:

Brazil is a truly global exporter, not tied to any particular region or market. More than half our exports are South-South trade and we expect markets in Asia and Africa to represent the future for Brazilian exporters. We think this trade has a lot of growth potential – many of these countries are already net food importers and have limited natural resources to produce their own agricultural products. The more these countries get richer – like China, India – the more they will need our exports, particularly meat.<sup>7</sup>

In developing countries, more and better food is one of the first demands from consumers as incomes rise. While developed countries are mature markets with limited potential for growth, rapid income growth in the developing world is driving an explosion of demand for Brazil's agricultural products and Brazil's trade is now heavily oriented towards these countries. Rather than being dependent on the US and EU markets, Brazil now competes with them in third country markets. Indeed, for most of its key agricultural exports – including products such as soybeans, beef, poultry, pork, corn, cotton, and orange juice – Brazil is in direct competition with the US and EU (USDA 2009). Thus, far from being dependent on rich country markets, as it was in the past as a tropical products exporter, Brazil now sees the US and EU as its primary

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<sup>7</sup> Interview, Geneva, March 2009.

competitors in the developing country markets that represent the main destination for its exports and the key source of future demand growth.

Since Brazil's agricultural export markets are increasingly concentrated in the developing world, where it competes with heavily subsidized agricultural products from the US, EU and other developed countries, Brazil determined that its primary objective was to reduce rich country subsidies. In the words of a Brazilian negotiator:

Structural changes in the world trading system really can provide Brazil with great opportunities in the future. The WTO negotiations are important because we will probably be displacing the big guys in the global market. That's why we have been pushing so hard on the Doha Round and why we are the major developing country user of the dispute settlement system.<sup>8</sup>

As another Brazilian official expressed it, "Now, in the US today, agriculture is inefficient, addicted to subsidies and seriously flawed. It's the law of survival – you either survive by being competitive or die."<sup>9</sup>

Consequently, Brazil became highly active in seeking to advance its offensive trade interests at the WTO (see Hopewell 2016b). In 2002, it launched – and ultimately won – two landmark trade disputes against US and EU agriculture subsidies (the cotton and sugar cases, respectively). These marked the first time that a developing country had successfully challenged developed country agriculture subsidies through the WTO's dispute settlement system and required both the US and EU to substantially modify their agriculture programs. In addition to their material implications, the cases were also symbolically important in strengthening Brazil's position,

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<sup>8</sup> Interview, Geneva, March 2009.

<sup>9</sup> Interview, Geneva, June 2009.

helping it to construct an image of itself as a contemporary hero of the developing world taking on the traditional powers.

Within the Doha negotiations, Brazil created and led a coalition of developing countries – the Group of 20 (G20-T) – in challenging developed country agricultural subsidies. The creation of the G20-T represented a critical turning point at the WTO, which one ambassador likened to “a tectonic shift” within the institution.<sup>10</sup> By turning the tables and seizing the offensive vis-à-vis the traditional powers, Brazil’s leadership of the G20-T helped bring an end to the longstanding dominance of the US and EU and catapulted Brazil into the elite inner-circle of power at the WTO, making it a central player in the Doha Round. Brazil’s activism helped to make agriculture – and particularly rich country subsidies – a central focus of the Doha Round, and Brazil and the G20-T came to have a major influence on the substance of the negotiations.

In Brazil’s mobilization and leadership of developing countries into an effective political bloc at the WTO, we see echoes of the Third World activism that took place during Prebisch’s leadership of UNCTAD. Yet the recent dynamic – of developing countries going on the offensive against the advanced-industrialized states and pushing them to open their markets and reduce trade barriers through the WTO – is entirely new and represents a major break with the strategies of earlier decades. In an earlier era, with the GATT heavily dominated by the rich, advanced-industrialized states, developing countries went outside the GATT to pursue their interests via the creation of UNCTAD. UNCTAD was intended to provide an alternative forum for international trade negotiations and became the site of developing country efforts to construct

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<sup>10</sup> Interview, Geneva, May 2009.

a New International Economic Order (NIEO), in which Brazil was an important figure (see Hannah and Scott, this volume). In contrast, however, today Brazil is pursuing its trade interests in and through the GATT/WTO, rather than seeking to go outside and challenge that system, as it did in the past. Although Brazil has employed a rhetoric strongly reminiscent of the era of Third Worldism in the 1960s-70s and its calls for a radical overhaul of the international economic order, the agenda it has actually been pursuing at the WTO fits solidly within – rather than challenges – the liberal trade paradigm. Rather than rejecting the rules, norms and principles of the liberal trading system, Brazil has embraced them, seeking to work with the rules and use them to its advantage (Hopewell 2016b). In effect, it turned the WTO system against its originators, demanding further market liberalizing reforms from the US and other rich countries. Brazil's strategy – calling out the US, who had long been the traditional aggressor in multilateral trade negotiations, at its own game – proved highly effective in destabilizing the traditional power structure within the WTO, dramatically increasing Brazil's status and influence, and boosting the bargaining power of developing countries more broadly in the negotiations. Ironically, however, in seeking to advance its interests via the WTO, Brazil – along with China and India – substantially disrupted that system, as evidenced by the breakdown of the Doha Round due to conflict between the US and the emerging powers (Hopewell 2016b).

### **A Rising Power on the International Stage**

Brazil's emergence as a major agricultural trader has thus played an important role in its enhanced prestige and influence as a rising power in the global political economy. While Prebisch saw being an agricultural exporter as incompatible with either economic or political power in the international system, the dramatic expansion of Brazil's agro-industrial sector has

been a central factor in its newfound status as both an emerging economy *and* an emerging power. Besides being a hard power resource, Brazil's economic achievements have also provided a crucial source of soft power, helping Brazil to construct itself as a successful voice and leader of the developing world and a model for other countries to emulate in seeking to foster growth and reduce poverty. Combined, these forces have propelled Brazil to the high table of decision-making in the institutions responsible for global economic governance (Armijo and Burges 2010; Hurrell 2010; Narlikar 2010).

While Brazil's ascension has been perhaps most striking at the WTO, its enhanced status in global economic governance is evident far beyond that institution. Brazil secured a seat in the Group of 20 (G20) Leader's Summit, comprised of the major developed and developing economies, when it replaced the old Group of 8 (G8) advanced-industrialized states as the primary forum for international economic cooperation (Cooper 2010; Schirm 2013). It is a founding member of the BRICS grouping of emerging powers, as well as the new BRICS Development Bank, an alternative and rival to the Western-dominated World Bank (Chin 2014). Brazil has also played a prominent role in the international climate change negotiations (Hochstetler and Viola 2012). And, in a further sign of the country's growing international clout, its former officials have been selected to head key international organizations: José Graziano da Silva, the architect of Brazil's Zero Hunger program, has served as Director-General of the UN Food and Agriculture (FAO) since 2012 and Roberto Azevêdo, previously Brazil's Ambassador and Chief Trade Negotiator, has been Director-General of the WTO since 2013.

In addition, EMBRAPA has also become a key element of Brazil's foreign aid policy and efforts to foster South-South cooperation and an important source of soft power (White 2010). Now the world's leading tropical research institute, EMBRAPA began internationalizing its activities in the late-1990s, providing technical training and capacity-building to other developing countries and disseminating its technologies and expertise (Correa and Schmidt 2014; Pardey 2004). Brazilian political leaders and officials celebrate these endeavours as helping other countries in the Global South to achieve economic growth and development through agricultural modernization and the fostering of competitive, market-oriented agro-export industries, while also improving food security and contributing to poverty-reduction. EMBRAPA currently has cooperative arrangements in place with 56 countries; it has been particularly active in Africa, where it has projects in 38 countries (Cabral and Shankland 2013). One such initiative, for example, involves transferring and adapting Brazil's successful technologies for boosting cotton yields and quality to the "Cotton-4" countries (Mali, Benin, Chad and Burkina Faso), which have been strategically important supporters of Brazil's challenge to US cotton subsidies at the WTO (Alves 2013).

Among the most high-profile initiatives is ProSAVANA – a project launched in 2011 to transfer and adapt the Brazilian technology and expertise that transformed the *cerrado* to Mozambique, where soil and climate conditions are similar (Alves 2013). The project – essentially an effort to replicate Brazil's model of intensive, export-oriented agriculture in Africa – has been criticized by many civil society organizations as a land grab by Brazilian agribusiness, facilitated by the state under the guise of development cooperation, which they fear will result in a large-scale displacement of peasants (GRAIN 2013). Nonetheless, despite such criticism, technical



cooperation in agriculture has factored importantly in Brazil's efforts to build political alliances and strengthen relations with other developing countries, which in turn is part of the country's broader ambitions to increase its status and influence on the international stage. Agricultural cooperation has thus come to serve as an instrument of Brazil's foreign policy, while simultaneously creating commercial opportunities and advancing the interests of Brazilian firms.

### **Criticisms of Brazil's Agro-Industrial Export Model**

Despite the success Brazil has achieved with the growth of its agribusiness sector, the consequences of its path of industrialized, export-oriented agriculture are complex and far from unproblematic. The expansion of industrialized agriculture has generated considerable social and environmental upheaval. Although the *cerrado* had been previously viewed as a wasteland from the perspective of commercial agriculture, it was neither vacant nor barren in reality. While population density was low, the *cerrado* was home to peasants and indigenous peoples and supported rich biodiversity (Machado 2009; Oliveira 2013; Pires 2000). The expansion of Brazilian agribusiness – in the *cerrado* and elsewhere throughout the country – has been accompanied by the (often violent) expulsion of peasants and indigenous peoples from the land (Sullivan 2013).

Even today, when agribusiness is responsible for most of Brazil's agricultural production (75 percent) and virtually all of its exports, the vast majority of the country's farmers (85 percent) are small-holders, peasants and subsistence producers, for whom the expansion of large-scale agribusiness represents a significant threat (MDA 2009). Land distribution in Brazil has historically been amongst the most unequal in the world and this has only been exacerbated by

economic liberalization and the industrialization of agriculture, which have increased the concentration of large land holdings. Brazil's intensive, agro-industrial model has also come with significant environmental impacts, including soil degradation, water misuse and contamination, air pollution, deforestation, and the loss of biodiversity through the sacrifice of native fauna and flora (Barros 2009; Machado 2009; Pires 2000; Rodrigues 2009). The negative environmental impacts of industrialized agriculture are particularly acute in the *cerrado*, where countering the natural acidity of its soil and raising its fertility requires the application of massive quantities of industrial fertilizers (Rada 2013).

As a result, there has been extensive criticism from social movements, such as the Landless Workers Movement (MST), of the social and environmental costs of Brazil's intensive commodity-export model. Yet such concerns have not substantially disrupted the direction of Brazilian policy. Within the Brazilian state, small-scale farming and subsistence production are widely seen as a backwards and declining sector – and primarily as a target for social protection and welfare programs – while agro-industry is viewed as a dynamic sector and a key source of growth and prosperity.<sup>11</sup> Consequently, the commercial interests of the agribusiness sector and the continued expansion of exports have been given primacy in shaping the direction of Brazil's economic and trade policy (Hopewell 2016b). Despite the success of Brazil's agribusiness sector, and its role in enhancing Brazil's status and influence on the international stage, there are nonetheless important questions about the replicability and desirability of Brazil's model, given its environmental and social costs.

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<sup>11</sup> Interviews with Brazilian negotiators, Geneva, September 2008-June 2009, and officials, Brasilia and Sao Paulo, May 2010.

## **Conclusion**

Contrary to the expectations of Prebisch, agricultural expansion has provided Brazil with a means to enhance both its economic and political power. Not only has Brazilian agriculture been profoundly transformed, but so too has its position in the global political economy. Brazil's emergence as an agribusiness powerhouse has brought it enhanced economic clout as a rising power, which it has successfully channelled into a higher profile on the international stage and particularly in global economic governance. But importantly, what has emerged in Brazil is industrialized agriculture, driven by state-led technological innovation. State-led research and development, and resulting technological advances, backed by extension services and subsidized financing, played a critical role in Brazil's emergence as an agro-export powerhouse by expanding its supply of arable and pasturable land, adapting formerly temperate crops to the country's tropical climate and soils, and significantly increasing yields and productivity. Combined, these factors have dramatically increased Brazil's agricultural production, while reducing the costs and improving the competitiveness of its exports in global markets, transforming Brazil into a major rival to the world's leading agricultural exporters, the US and EU. The Brazilian case thus confirms Prebisch's belief that an active, interventionist state engaged in promoting technological innovation is critical to economic growth and development, although in Brazil's case, this has been in agriculture rather than manufacturing.

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